

SECTION 09 65 00

RESILIENT FLOORING

08/10

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D4078	(2002; R 2008) Water Emulsion Floor Polish
ASTM E2129	(2010) Standard Practice for Data Collection for Sustainability Assessment of Building Products
ASTM E648	(2010e1) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
ASTM F 1482	(2004; R 2009e1) Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
ASTM F 1700	(2004; R 2010) Solid Vinyl Floor Tile
ASTM F 1861	(2008) Resilient Wall Base
ASTM F 1869	(2011) Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
ASTM F 2034	(2008) Sheet Linoleum Floor Covering
ASTM F 2170	(2011) Determining Relative Humidity in Concrete Floor Slabs in situ Probes
ASTM F 710	(2011) Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

GREENGUARD ENVIRONMENTAL INSTITUTE (GEI)

GEI	Greenguard Standards for Low Emitting Products
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SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	Scientific Certification Systems (SCS) Indoor Advantage
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U.S. GREEN BUILDING COUNCIL (USGBC)

LEED (2009; R 2009) Leadership in Energy and Environmental Design(tm) Green Building Rating System for New Construction (LEED-NC)

1.2 SYSTEM DESCRIPTION

1.2.1 Local/Regional Materials

Use materials or products extracted, harvested, or recovered, as well as manufactured, within a 500 mile radius from the project site, if available from a minimum of three sources. Flooring materials may be locally available. Flooring and accessories may contain post-consumer or post-industrial recycled content.

1.2.2 Environmental Data

Submit Table 1 of ASTM E2129 for the following products: All

1.2.3 Fire Resistance Requirements

Provide a minimum average critical radiant flux of 0.45 watts per square centimeter for flooring in corridors and exits when tested in accordance with ASTM E648.

1.2.4 Other Submittal Requirements

The following shall be submitted in accordance with LEED:

- a. documentation indicating percentage of post-industrial and post-consumer recycled content per unit of product. Indicate relative dollar value of recycled content products to total dollar value of products included in project.
- b. documentation indicating distance between manufacturing facility and the project site. Indicate distance of raw material origin from the project site. Indicate relative dollar value of local/regional materials to total dollar value of products included in project.
- c. documentation indicating type of biobased material in product and biobased content. Indicate relative dollar value of biobased content products to total dollar value of products included in project.
- d. documentation relative to local/regional materials credit in accordance with LEED Reference Guide. Include in LEED Documentation Notebook.
- e. documentation relative to recycled content credit in accordance with LEED Reference Guide. Include in LEED Documentation Notebook.
- f. documentation relative to low-emitting materials credit in accordance with LEED Reference Guide. Include in LEED Documentation Notebook.
- g. documentation relative to rapidly renewable materials credit in accordance with LEED Reference Guide. Include in LEED Documentation Notebook.

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Resilient Flooring and Accessories; G, AE

SD-03 Product Data

Resilient Flooring and Accessories; G, AE
Adhesives; (LEED)
Vinyl Composition Tile
Sheet Vinyl Flooring
Rubber Tile
Rubber Sheet Flooring
Solid Vinyl Tile
Cement-Fiber Board
Wall Base
Stair Treads, Risers and Stringers
Local/Regional Materials
Environmental Data
Sheet Linoleum
Linoleum Tile
Cork
Certification

SD-04 Samples

Resilient Flooring and Accessories; G, AE

SD-06 Test Reports

Moisture, Alkalinity and Bond Tests; G, AE

SD-08 Manufacturer's Instructions

Surface Preparation; G, AE
Installation; G, AE

SD-10 Operation and Maintenance Data

Resilient Flooring and Accessories; G, AE

SD-11 Closeout Submittals

Local/Regional Materials
Resilient Flooring and Accessories
Adhesives
Sheet Linoleum
Linoleum Tile
Cork

1.4 SUSTAINABLE DESIGN CERTIFICATION

Product shall be third party certified by GEI Greenguard Indoor Air Quality Certified, SCS Scientific Certification Systems Indoor Advantage or equal. Certification shall be performed annually and shall be current.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the building site in original unopened containers bearing the manufacturer's name, style name, pattern color name and number, production run, project identification, and handling instructions. Store materials in a clean, dry, secure, and well-ventilated area free from strong contaminant sources and residues with ambient air temperature maintained above 68 degrees F and below 85 degrees F, stacked according to manufacturer's recommendations. Remove resilient flooring products from packaging to allow ventilation prior to installation. Protect materials from the direct flow of heat from hot-air registers, radiators and other heating fixtures and appliances. Observe ventilation and safety procedures specified in the MSDS. Do not store rubber surface products with materials that have a high capacity to adsorb volatile organic compound (VOC) emissions. Do not store exposed rubber surface materials in occupied spaces. Do not store resilient flooring near materials that may offgas or emit harmful fumes, such as kerosene heaters, fresh paint, or adhesives.

1.6 ENVIRONMENTAL REQUIREMENTS

Maintain areas to receive resilient flooring at a temperature above 68 degrees F and below 80 degrees F for 3 days before application, during application and 2 days after application, unless otherwise directed by the flooring manufacturer for the flooring being installed. Maintain a minimum temperature of 60 degrees F thereafter. Provide adequate ventilation to remove moisture from area and to comply with regulations limiting concentrations of hazardous vapors.

1.7 SCHEDULING

Schedule resilient flooring application after the completion of other work which would damage the finished surface of the flooring.

1.8 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a one year period.

1.9 EXTRA MATERIALS

Provide extra flooring material of each color and pattern at the rate of 5 tiles for each 1000 tiles and 5 square feet for each 1000 square feet of sheet flooring installed. Provide extra wall base material composed of 20 linear feet of each type, color and pattern. Package all extra materials in original properly marked containers bearing the manufacturer's name, brand name, pattern color name and number, production run, and handling instructions. Provide extra materials from the same lot as those installed. Leave extra stock at the site in location assigned by Contracting Officer.

PART 2 PRODUCTS

2.1 SOLID VINYL TILE

Conform to ASTM F 1700 Class III printed film minimum wear layer thickness 0.020 inch and minimum overall thickness 0.12 inch, Type B embossed. Provide a 6" inch by 36" by 0.120" inch thick tile. Tile shall contain a minimum of 6.0 percent post-consumer recycled content and 31 percent pre-consumer recycled content in material. Use Centiva Contour Festival-Rays and Contour Plank-Cherry for the Basis of Design.

2.2 SHEET LINOLEUM

Conform to ASTM F 2034 and consist of a homogeneous layer of a mixture of linoleum cement (binder in linoleum consisting of a mixture of linseed oil, pine rosin, fossil, or other resins or rosins, or an equivalent oxidized oleoresinous binder), cork and/or wood flour, mineral fillers, and pigments bonded to a jute backing. Provide a minimum 6 feet wide and overall thickness not less than 0.100 inch for linoleum. Provide welding rods as recommended by the manufacturer for heat welding of joints. Use Fotbo Marmolevm Fresco linoleum sheet resilient floor covering in Silver Birch as a Basis of Design.

2.3 ADHESIVES

Provide adhesives for flooring, base and accessories as recommended by the manufacturer and comply with local indoor air quality standards. Interior adhesives shall meet the requirements of LEED low emitting materials credit.

Submit manufacturer's descriptive data, documentation stating physical characteristics, and mildew and germicidal characteristics. Provide Material Safety Data Sheets (MSDS) for all primers and adhesives to the Contracting Officer. Highlight VOC emissions.

2.4 SURFACE PREPARATION MATERIALS

Provide surface preparation materials, such as panel type underlayment, lining felt, and floor crack fillers as recommended by the flooring manufacturer for the subfloor conditions. Comply with ASTM F 1482 for panel type underlayment products.

2.5 POLISH/FINISH

Provide polish finish as recommended by the manufacturer and conform to ASTM D4078 for polish.

2.6 CAULKING AND SEALANTS

Provide caulking and sealants in accordance with Section 07 92 00 JOINT SEALANTS.

2.7 MANUFACTURER'S COLOR, PATTERN AND TEXTURE

Provide color, pattern and texture for resilient flooring and accessories in accordance with Finish Schedule as indicated on the drawings selected from manufacturer's standard colors. Color listed is not intended to limit the selection of equal colors from other manufacturers. Provide floor patterns as specified on the drawings Sheet No. IN101 and IN102. Provide flooring in any one continuous area or replacement of damaged flooring in continuous area from same production run with same shade and pattern.

Submit scaled drawings indicating patterns (including location of patterns and colors) and dimensions. Submit manufacturer's descriptive data and three samples of each indicated color and type of flooring, base, mouldings, and accessories sized a minimum 2-1/2 by 4 inch.

2.8 TOP SET WALL BASE

Wall base must conform to ASTM F 1861 Type TV, Group 2. Install top set wall base in accordance with manufacture's printed installation instructions. The wall base and adhesive are to be maintained between 65 degree F and 85 degree F for at least 48 hours before installation. The wall base should have a gauge on greater than 1/8 inch and should be coved and at a height of 4 inches. Use Roppe Vinyl Wall Base in (193) Black Brown as a Basis of Design.

PART 3 EXECUTION

3.1 EXAMINATION

Examine and verify that site conditions are in agreement with the design package. Report all conditions that will prevent a proper installation. Do not take any corrective action without written permission from the Government. Work will proceed only when conditions have been corrected and accepted by the installer. Submit manufacturer's printed installation instructions for all flooring materials and accessories, including preparation of substrate, seaming techniques, and recommended adhesives.

3.2 SURFACE PREPARATION

Provide a smooth, true, level plane for surface preparation of the flooring, except where indicated as sloped. Floor to be flat to within 3/16 inch in 10 feet. Prepare subfloor in accordance with flooring manufacturer's recommended instructions. Prepare the surfaces of lightweight concrete slabs (as defined by the flooring manufacturer) as recommended by the flooring manufacturer. Comply with ASTM F 710 for concrete subfloor preparation. Floor fills or toppings may be required as recommended by the flooring manufacturer. Install underlayments, when required by the flooring manufacturer, in accordance with manufacturer's recommended printed installation instructions. Comply with ASTM F 1482 for panel type underlayments. Before any work under this section is begun, correct all defects such as rough or scaling concrete, chalk and dust, cracks, low spots, high spots, and uneven surfaces. Repair all damaged portions of concrete slabs as recommended by the flooring manufacturer. Remove concrete curing and sealer compounds from the slabs, other than the type that does not adversely affect adhesion. Remove paint, varnish, oils, release agents, sealers, waxes, and adhesives, as required by the flooring product in accordance with manufacturer's printed installation instructions.

3.3 MOISTURE, ALKALINITY AND BOND TESTS

Determine the suitability of the concrete subfloor for receiving the resilient flooring with regard to moisture content and pH level by moisture and alkalinity tests. Conduct moisture testing in accordance with ASTM F 1869 or ASTM F 2170, unless otherwise recommended by the flooring manufacturer. Conduct alkalinity testing as recommended by the flooring manufacturer. Determine the compatibility of the resilient flooring adhesives to the concrete floors by a bond test in accordance with the flooring manufacturer's recommendations. Submit copy of test reports for moisture and alkalinity content of concrete slab, and bond test stating

date of test, person conducting the test, and the area tested.

3.4 PLACING VINYL COMPOSITION, LINOLEUM AND SOLID VINYL TILES

Install tile flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's directions. Keep tile lines and joints square, symmetrical, tight, and even. Keep each floor in true, level plane, except where slope is indicated. Vary edge width as necessary to maintain full-size tiles in the field, no edge tile to be less than one-half the field tile size, except where irregular shaped rooms make it impossible. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Cut, fit, and scribe edge tile to walls and partitions after field flooring has been applied.

3.5 PLACING SHEET LINOLEUM FLOORING

Install sheet linoleum flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Provide square, symmetrical, tight, and even flooring lines and joints. Keep each floor in true, level plane, except where slope is indicated. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Lay out sheets to minimize waste. Cut, fit, and scribe flooring to walls and partitions after field flooring has been applied. Cut seams by overlapping or underscribing as recommended by the manufacturer. Provide heat welded seams in rooms as shown on the drawings in accordance with manufacturer's written installation instructions. Finish joints flush, free from voids, recesses, and raised areas.

3.6 PLACING INTEGRAL COVED BASE

Install integral cove base in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Shape integral coved base by extending the flooring material 6 inch onto the wall surface. Support cove by a filler. Provide a cap strip at the top of the base. Fill voids along the top edge of base at masonry walls with caulk.

3.7 CLEANING

Immediately upon completion of installation of flooring in a room or an area, dry/clean the flooring and adjacent surfaces to remove all surplus adhesive. Clean flooring as recommended in accordance with manufacturer's printed maintenance instructions. No sooner than 5 days after installation, wash flooring with a nonalkaline cleaning solution, rinse thoroughly with clear cold water, and, except for rubber flooring and stair treads, risers and stringers, vinyl and other flooring not requiring polish finish by manufacturer, apply the number of coats of polish in accordance with manufacturer's written instructions. Clean and maintain all other flooring as recommended by the manufacturer.

3.8 WASTE MANAGEMENT

Separate offcuts and waste materials and reuse or recycle in accordance with the Waste Management Plan, keeping sheet materials larger than 2 square feet and tiles larger than 1/2 tiles separate for reuse. Identify manufacturer's policy for collection or return of construction scrap, unused material, demolition scrap, and/or packaging material. Shred scrap

linoleum for composting on site. Place materials defined as hazardous or toxic waste in designated containers and dispose of properly. Close and seal tightly partly used sealant and adhesive containers and store protected in a well ventilated fire-safe area at moderate temperature.

3.9 PROTECTION

From the time of installation until acceptance, protect flooring from damage as recommended by the flooring manufacturer. Remove and replace flooring which becomes damaged, loose, broken, or curled and wall base which is not tight to wall or securely adhered.

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